

CLAIMS

WHAT IS CLAIMED:

1. A communications system, comprising:

physical layer hardware adapted to communicate data over a communications channel
in accordance with a plurality of control codes, the physical layer hardware
being adapted to demodulate an incoming analog signal to generate a digital
receive signal and modulate a digital transmit signal to generate an analog
transmit signal; and

a processing unit adapted to execute a privileged driver for interfacing with the
physical layer hardware, the privileged driver including program instructions
for implementing a protocol layer to decode the digital receive signal, encode
the digital transmit signal, and configure the physical layer hardware for
receipt of the digital receive signal and transmission of the digital transmit
signal based on the plurality of control codes.

2. The system of claim 1, further comprising a memory adapted to store a
privileged code, the privileged code, when executed by the processing unit being adapted to
define an instruction for configuring the physical layer hardware as a privileged instruction,
receiving a request to execute the privileged instruction from a calling program, determine if
the calling program has authority to execute the privileged instruction, and execute the
privileged instruction in response to determining the calling program has the authority to
execute the privileged instruction.

3. The system of claim 2, wherein the privileged code, when executed, is adapted
to determine if the calling program comprises the privileged driver.

4. The system of claim 2, further comprising a first and second register, wherein the privileged code, when executed, is adapted to write to the first and second registers to define a memory region in a computer system where the privileged instruction resides.

5. The system of claim 2, wherein the privileged code, when executed, is adapted to determine if the calling program has authority to execute the privileged instruction by referencing a stack of a computer system to verify the identity of the calling program.

6. The system of claim 2, wherein the privileged code, when executed, is adapted to determine if the calling program has authority to execute the privileged instruction by authenticating the calling program.

7. The system of claim 2, wherein the privileged code, when executed, is adapted to receiving the request to execute the privileged instruction by receiving an exception generated by the processing unit in response to the calling program attempting to execute the privileged instruction.

8. The system of claim 1, wherein the control codes include at least one of a power level assignment, a frequency assignment, and a time slot assignment.

9. The system of claim 1, wherein the processing unit comprises a microprocessor.

10. The system of claim 1, further comprising:

a processor complex adapted to execute the privileged code;
a bus coupled to the processor complex; and
an expansion card coupled to the bus, the expansion card including the physical layer hardware.

5

11. A communications system, comprising:

physical layer hardware adapted to communicate data over a communications channel in accordance with a plurality of control codes, the physical layer hardware being adapted to demodulate an incoming analog signal to generate a digital receive signal and modulate a digital transmit signal to generate an analog transmit signal;

a processing unit adapted to execute a privileged driver for interfacing with the physical layer hardware, the privileged driver including program instructions for implementing a protocol layer to decode the digital receive signal, encode the digital transmit signal, and configure the physical layer hardware for receipt of the digital receive signal and transmission of the digital transmit signal based on the plurality of control codes;

a memory adapted to store a privileged code, the privileged code, when executed by the processing unit, being adapted to define an instruction for configuring the physical layer hardware as a privileged instruction, receiving a request to execute the privileged instruction from a calling program, determine if the calling program has authority to execute the privileged instruction, and execute the privileged instruction in response to determining the calling program has the authority to execute the privileged instruction.

20

25

12. A method for configuring a transceiver, comprising:
demodulating an incoming analog signal to generate a digital receive signal based on
a plurality of control codes;
modulating a digital transmit signal to generate an analog transmit signal based on the
control codes; and
executing a privileged driver for configuring the plurality of control codes.

13. The method of claim 12, further comprising:
defining an instruction for configuring the control codes as a privileged instruction;
receiving a request to execute the privileged instruction from a calling program;
determining if the calling program has authority to execute the privileged instruction;
and
executing the privileged instruction in response to determining the calling program
has the authority to execute the privileged instruction.

14. The method of claim 13, wherein determining if the calling program has
authority to execute the privileged instruction further comprises determining if the calling
program comprises the privileged driver.

15. The method of claim 13, wherein determining if the calling program has
authority to execute the privileged instruction further comprises referencing a stack of a
computer system to verify the identity of the calling program.

16. The method of claim 13, wherein determining if the calling program has authority to execute the privileged instruction further comprises authenticating the calling program.

5 17. The method of claim 13, wherein receiving the request to execute the privileged instruction further comprises receiving an exception in response to the calling program attempting to execute the privileged instruction.

18. The method of claim 12, wherein demodulating the incoming analog signal based on the plurality of control codes further comprises demodulating the incoming analog signal based on at least one of a frequency assignment, and a time slot assignment.

19. The method of claim 12, wherein modulating the digital transmit signal based on the control codes further comprises modulating the digital transmit signal based on at least one of a power level, a frequency assignment, and a time slot assignment.

20. A method for configuring a transceiver, comprising:
demodulating an incoming analog signal to generate a digital receive signal based on a plurality of control codes;
20 modulating a digital transmit signal to generate an analog transmit signal based on the control codes;
executing a privileged driver for configuring the plurality of control codes;
defining an instruction for configuring the control codes as a privileged instruction;
receiving a request to execute the privileged instruction from a calling program;

determining if the calling program has authority to execute the privileged instruction;
and
executing the privileged instruction in response to determining the calling program
has the authority to execute the privileged instruction.

5

21. A communication system, comprising:
means for demodulating an incoming analog signal to generate a digital receive signal
based on a plurality of control codes;
means for modulating a digital transmit signal to generate an analog transmit signal
based on the control codes; and
means for executing a privileged driver for configuring the plurality of control codes.

10

22. The system of claim 21, further comprising:
means for defining an instruction for configuring the control codes as a privileged
instruction;
means for receiving a request to execute the privileged instruction from a calling
program;
means for determining if the calling program has authority to execute the privileged
instruction; and
means for executing the privileged instruction in response to determining the calling
program has the authority to execute the privileged instruction.

15

20